
CLAIMS

1) A power handling device having a chassis supporting at least two rolling elements, a handle shaft mounting to the chassis, a motor for driving at least one of said rolling elements, and a power supply for energizing said motor, each of the rolling elements rotating about a rotational axis, said power handling device characterized by:

a Non-Interference Envelope (NIE) defined by straight lines intersecting outermost points of tangency on at least two of said rolling elements, said motor lying within said NIE.

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2) The power handling device according to claim 1

wherein at least one of said rolling elements circumscribes and is driven by said motor.

15 3) The power handling device according to claim 2

wherein said motor includes an output drive shaft;

wherein said drive roller is co-axial with said output drive shaft, and

is further characterized by:

a torque drive means for directly driving said drive roller about said rotational axis thereof.

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4) The power handling device according to claim 3

wherein said chassis includes a cylindrical support having an end defining an inwardly facing flange and a central aperture;

wherein said motor is affixed to said flange and disposed internally of said cylindrical support;

5 wherein said drive roller circumscribes said cylindrical support, and

wherein said output drive shaft extends through said aperture and directly drives an end of said drive roller about said rotational axis.

5) The power handling device according to claim 1

10 wherein said rolling elements comprise at least three rolling elements defining a substantially triangular profile, and

means for reconfiguring chassis to enable support by at least two pairs of said rolling elements.

15 6) The power handling device according to claim 5

wherein said at least three rolling elements comprise a drive roller, a forward roller and a pair of aft wheels, said drive roller being disposed at the apex of said triangular profile and interposed between said forward roller and pair of aft wheels, and

20 wherein said chassis is separated to define a forward propulsion section and an aft handling section, and

said reconfiguration means being further characterized by:

a detachment means disposed between said drive roller and another of said rolling elements to facilitate separation and attachment of said forward propulsion section and said aft handling section.

5 7) The power handling device according to claim 5 further characterized by:

means for pivotally mounting said handle shaft to said chassis, said pivot mounting means effecting rotation of said handle shaft about said rotational axis of said pair of aft wheels, and

means for repositioning said handle shaft relative to said chassis to vary the
10 angular orientation of said handle shaft.

8) The power handling device according to claim 5

further characterized by

a push/pull fitting disposed in combination with said chassis.

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- 9) The power handling device according to claim 5
- wherein said forward roller is detachably mounted within forward apertures of said chassis; and
- 5 wherein said push/pull fitting is mounted to said forward apertures to provide an abutment surface in an operational mode requiring an object to be linearly pushed/pulled.

10) A power handling device having a chassis supporting a plurality of rolling elements, a handle shaft mounting to the chassis, a motor for driving at least one of said rolling elements, and a power supply for energizing said motor, each of the rolling
5 elements rotating about a rotational axis, said power handling device characterized by:

said rolling elements comprising at least three rolling elements defining a substantially triangular profile, and

means for reconfiguring said chassis to enable support by at least two pairs of rolling elements.

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11) The power handling device according to claim 10

wherein said at least three rolling elements comprise a drive roller, a forward roller and a pair of aft wheels, said drive roller being disposed at the apex of said triangular profile and interposed between said forward roller and pair of aft wheels, and

15 wherein said chassis is bifurcated to define a forward propulsion section and an aft handling section, and

said reconfiguration means is further characterized by:

a detachment means disposed between said drive roller and another of said rolling elements to facilitate separation and attachment of said forward propulsion section and

20 said aft handling section.

12) The power handling device according to claim 10 further characterized by:

means for pivotally mounting said handle shaft to said chassis, said pivot mounting means effecting rotation of said handle shaft about said rotational axis of said pair of aft wheels, and

means for repositioning said handle shaft relative to said chassis to vary the
5 angular orientation of said handle shaft.

13) The power handling device according to claim 10 further characterized by a push/pull fitting disposed in combination with said chassis.

10 14) The power handling device according to claim 10 wherein said forward roller is detachably mounted within forward apertures of said chassis; and

wherein said push/pull fitting is mounted to said forward apertures to provide an abutment surface in an operational mode requiring said object to be linearly
15 pushed/pulled.

15) The power handling device according to claim 10 wherein at least one of said rolling elements circumscribes and is driven by said motor.

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16) The power handling device according to claim 15 wherein said motor includes an output drive shaft; wherein said drive roller is co-axial with said output drive shaft, and

is further characterized by:

a torque drive means for directly driving said drive roller about said rotational axis thereof.

5 17) The power handling device according to claim 16

wherein said chassis includes a cylindrical support having an end defining an inwardly facing flange and a central aperture;

wherein said motor is affixed to said flange and disposed internally of said cylindrical support;

10 wherein said drive roller circumscribes said cylindrical support, and

wherein said output drive shaft extends through said aperture and directly drives an end of said drive roller about said rotational axis.

18) A power handling device for manipulating heavy objects, said power handling
15 device having a chassis supporting a plurality of rolling elements, a handle shaft mounting to the chassis, a motor for driving at least one of said rolling elements, said power handling device characterized by:

a push/pull fitting pivotally mounted to said chassis and having an abutment
surface disposed forward of the chassis such that in one operational mode the fitting is
20 pivoted to a forward position and said abutment surface propels the object and

in another operational mode the fitting is pivoted to a reward stowed position such that the drive roller engages and propels the object.

docking station means for recharging said power source.

19) The power handling device according to claim 18

wherein said rolling elements comprise a forward support roller, an aft pair of wheels and a drive roller disposed therebetween, said rolling elements defining a
5 substantially triangular profile, and
wherein said fitting is a pivotally mounted aft of said drive roller.

20) The power handling device according to claim 19

wherein said drive roller circumscribes and is driven by said motor.

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